

What is claimed is:

1. A high density recording medium with a super-resolution near-field structure including a sequential stack of a second dielectric layer, a recording layer, a protective layer, a mask layer, a first dielectric layer, and a polycarbonate layer, wherein the mask layer comprises high melting point metal oxide or silicon oxide to generate a near field by optically or thermally inducing physical changes in the crystalline structure and optical properties of the high melting point metal oxide or silicon oxide.
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2. The high density recording medium of claim 1, wherein the high melting point metal oxide for the mask layer is WO_x which shows nearly reversible physical changes.
- 15 3. The high density recording medium of claim 1, wherein the high melting point metal oxide for the mask layer is TaO_x or AuO_x which shows irreversible physical changes.
- 20 4. The high density recording medium of claim 1, wherein the silicon oxide for the mask layer is SiO_x which shows irreversible physical changes.
- 25 5. The high density recording medium of any one of claims 1 through 4, further comprising a reflective layer containing silver or aluminum below the second dielectric layer.